TEST REPORT OF FINE AGGREGATE

Lab ID	:	**CP-2017-03-18-03** **Date: 24-03-2017**
Customer	:	Asisstant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Road and Drains at Kogilu Ayyappa Enclave in ward no.05 Byatarayanapura Sub Division.
Agency	:	M.Sathish, #06, 60 Feet road, RMV 2nd stage, Boopasandra Hoysala STI Krishna Apartment Bangalore.
Customer's Reference	:	BBMP/EE/BTP/WO/230/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	18-03-2017
Sample ID No	:	2017-03-18-03-03
Sample Type	:	Fine Aggregates
Reference to BIS codes	:	IS 383 : 2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1, 3) RA2012 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
Date of test		20-03-2017
Total weight taken	:	1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0	100	100	100	100	100
2	4.75 mm	74	74	7.4	92.6	90-100	90-100	90-100	95-100
3	2.36 mm	140	214	21.4	78.6	60-95	75-100	85-100	95-100
4	1.18 mm	102	316	31.6	68.4	30-70	55-90	75-100	90-100
5	600 micron	176	492	49.2	50.8	15-34	35-59	60-79	80-100
6	300 micron	230	722	72.2	27.8	5-20	8-30	12-40	15-50
7	150 micron	209	931	93.1	6.9	0-10	0-10	0-10	0-15
8	Pan	69	1000	100	0	---	---	---	---
Result :The tested Sample Conforms to Grading Zone II									

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2017-03-18-03** **Date: 24-03-2017**

Sample ID No : 2017-03-18-03-03

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.75	–
2	Specific Gravity	2.56	–
3	Material finer than 75 micron	4.90	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

Note:
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All information furnished by Customer/Representative
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Samples will be disposed after 30 days from the date of issue of test certificate

Prepared by
Harshitha

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2017-03-18-03** **Date: 24-03-2017**
Customer	:	Asisstant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Road and Drains at Kogilu Ayyappa Enclave in ward no.05 Byatarayanapura Sub Division.
Agency	:	M.Sathish, #06, 60 Feet road, RMV 2nd stage, Boopasandra Hoysala STI Krishna Apartment Bangalore.
Customer's Reference	:	BBMP/EE/BTP/WO/230/2016-17
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	18-03-2017
Sample ID No	:	2017-03-18-03-02(b)
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates)
		IS: 2386 :1963(Part - 1,3,4) RA2011
		IS 2386 Part 1: Particle Size and Shape
		IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
		IS 2386 Part 4: Mechanical Properties
Date of test	:	18-03-2017

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	1170	1170	7.8	92.2	90-100
3	20 mm	4246	5416	36.1	63.9	30-70
4	10 mm	4590	10006	66.7	33.3	10-35
5	4.75 mm	4610	14616	97.4	2.6	0-5
6	Pan	384	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2017-03-18-03** **Date: 24-03-2017**

Sample ID No : 2017-03-18-03-02(b)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	13.2	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	11.6	
3	Specific Gravity	2.67	–
4	Bulk Density(Loose) (Kg/l)	1.48	–
5	Bulk Density(Compacted) (Kg/l)	1.53	–
6	Water Absorption(%)	0.22	–

Note:

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Prepared by
Harshitha

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Authorized Signatory
Quality Manager

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2017-03-18-03** **Date: 14-04-2017**
Customer	:	Asisstant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Road and Drains at Kogilu Ayyappa Enclave in ward no.05 Byatarayanapura Sub Division.
Agency	:	M.Sathish, #06, 60 Feet road, RMV 2nd stage, Boopasandra Hoysala STI Krishna Apartment Bangalore.
Customer's Reference	:	BBMP/EE/BTP/WO/230/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	18-03-2017
Sample ID No	:	2017-03-18-03-01
Sample Type	:	Birla Super 53 grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	18-03-2017

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Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	2.90	–
2	Finess by Air permeablity method (m^2/kg, Min)	289.5	225m^2/kg, Min
3	Density (gm/cc)	3.2	–
4	Standard Consistency (%)	29.5%	Not specified
5	Initial Setting time	185 minutes	Not less than 30 minutes

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : **CP-2017-03-18-03** **Date: 25-03-2017**

Sample ID No : **2017-03-18-03-01**

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
6	Final Setting time	270 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1mm	Not more than 10 mm
8	Compressive Strength		
	3 Days	29.50N/mm^2	Not less than 27 N/mm^2
	7 Days	40.50N/mm^2	Not less than 37 N/mm^2
	28 Days	Report Date Due on 14-04-2017	Not less than 53 N/mm^2

Note:

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Prepared by
Harshitha

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID : **CP-2017-03-18-03** **Date: 14-04-2017**

Sample ID No : **2017-03-18-03-01**

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
6	Final Setting time	270 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1mm	Not more than 10 mm
8	Compressive Strength		
	3 Days	29.50N/mm^2	Not less than 27 N/mm^2
	7 Days	40.50N/mm^2	Not less than 37 N/mm^2
	28 Days	58.5 N/mm^2	Not less than 53 N/mm^2

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2017-03-18-03** **Date: 24-03-2017**
Customer	:	Asisstant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Road and Drains at Kogilu Ayyappa Enclave in ward no.05 Byatarayanapura Sub Division.
Agency	:	M.Sathish, #06, 60 Feet road, RMV 2nd stage, Boopasandra Hoysala STI Krishna Apartment Bangalore.
Customer Reference	:	BBMP/EE/BTP/WO/230/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	18-03-2017
Sample ID No	:	2017-03-18-03-02(a)
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates)
		IS: 2386 :1963(Part - 1,3,4) RA2011
		IS 2386 Part 1: Particle Size and Shape
		IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
		IS 2386 Part 4: Mechanical Properties
Date of test	:	18-03-2017

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : **5000** **grams**

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	308	308	6.16	93.84	90-100
3	10 mm	2387	2695	53.9	46.1	25-55
4	4.75 mm	2150	4845	96.9	3.1	0-10
5	Pan	155	5000	100	0	–

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2017-03-18-03** **Date: 24-03-2017**

Sample ID No : 2017-03-18-03-02(a)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	12.4	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	9.8	
3	Specific Gravity	2.68	–
4	Bulk Density(Loose) (Kg/l)	1.54	–
5	Bulk Density(Compacted) (Kg/l)	1.58	–
6	Water Absorption(%)	0.25	–
7	Ten percent fine value(KN)	196	–
7	Aggregate crushing Value(%)	23.5	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	22.6	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2017-04-24-01** **Date: 28-04-2017**

Customer : Asisstant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.

Address : Byatarayanapura Sub Division, BBMP, Bangalore.

Project Name : Improvements to Road and Drains at Kogilu Ayyappa Enclave in ward no.05 Byatarayanapura Sub Division.

Agency : M.Sathish, #06, 60 Feet road, RMV 2nd stage, Boopasandra Hoysala STI Krishna Apartment Bangalore.

Customer's Reference : BBMP/EE/BTP/WO/230/2016-17

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 24-04-2017

Sample ID No : 2017-04-24-01-01

Customer ID : Drain Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 27/04/2017

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen	Cross sectional area	Weight of the sample	Failure Load	Compressive strength	Average Compressive Strength
					(mm)	(Sq.mm)	(kg)	(KN)	(N/mm^2)	(N/mm^2)
1	Drain Concrete	M20	20/04/2017	27/04/2017	150.35 X 150.22 X 150.43	22586	8.180	395.2	17.5	17.7
2	Drain Concrete	M20	20/04/2017	27/04/2017	150.54 X 150.11 X 150.10	22598	8.230	400.0	17.7	
3	Drain Concrete	M20	20/04/2017	27/04/2017	150.56 X 150.54 X 150.55	22665	8.199	405.7	17.9	

Note:
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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID	:	**CP-2017-04-24-01** **Date: 19-05-2017**
Customer	:	Asisstant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Road and Drains at Kogilu Ayyappa Enclave in ward no.05 Byatarayanapura Sub Division.
Agency	:	M.Sathish, #06, 60 Feet road, RMV 2nd stage, Boopasandra Hoysala STI Krishna Apartment Bangalore.
Customer's Reference	:	BBMP/EE/BTP/WO/230/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	24-04-2017
Sample ID No	:	2017-04-24-01-02
Customer ID	:	Drain Concrete
Sample Type /Size	:	150X150X150 mm
Sample grade/Age	:	M20 / 28 Days Compressive Strength
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5
Date of test	:	18/05/2017

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Concrete	M20	20/04/2017	18/05/2017	150.21 X 150.11 X 150.41	22548	8.280	529.9	23.5	23.8
2	Drain Concrete	M20	20/04/2017	18/05/2017	150.21 X 150.22 X 150.42	22565	8.230	537.0	23.8	
3	Drain Concrete	M20	20/04/2017	18/05/2017	150.53 X 150.44 X 150.43	22646	8.320	545.8	24.1	

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Harsitha

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TEST RESULTS OF STEEL

Lab ID	:	**CP-2017-03-18-03**	**Date: 23-03-2017**
Customer	:	Asisstant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.	
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Road and Drains at Kogilu Ayyappa Enclave in ward no.05 Byatarayanapura Sub Division.	
Agency	:	M.Sathish, #06, 60 Feet road, RMV 2nd stage, Boopasandra Hoysala STI Krishna Apartment Bangalore.	
Customer's Reference	:	BBMP/EE/BTP/WO/230/2016-17	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	18-03-2017	
Sample ID No	:	2017-03-18-03-04	
Sample Type	:	Indus Fe 500	
Reference to BIS codes	:	IS 1786-2008	
Date of test:	:	20-03-2017	

Sl.No	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample (kg/m)	Yield stress (N/mm^2)	Tensile strength (N/mm^2)	Elongation (%)
1	Indus Fe 500	Fe500	8mm	0.392	527	610	19.0%

Sl.No	Identification of sample	Grade of the sample	Diameter of the steel bar	Bend test	Rebend test
1	Indus Fe 500	Fe500	8mm	Satisfactory	Satisfactory

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Prepared By:
Harshitha

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ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ, ಬೆಂಗಳೂರು-24

ಸಹಾಯಕ ಅಭಿಯಂತರರು
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TEST RESULTS OF STEEL

Lab ID	:	**CP-2017-03-18-03**	**Date: 23-03-2017**
Customer	:	Asisstant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.	
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Road and Drains at Kogilu Ayyappa Enclave in ward no.05 Byatarayanapura Sub Division.	
Agency	:	M.Sathish, #06, 60 Feet road, RMV 2nd stage, Boopasandra Hoysala STI Krishna Apartment Bangalore.	
Customer's Reference	:	BBMP/EE/BTP/WO/230/2016-17	
Source of Sample	:	Sample supplied by Agency	
Sample Condition	:	Satisfactory	
Date of Receipt	:	18-03-2017	
Sample ID No	:	2017-03-18-03-05	
Sample Type	:	Indus Fe 500	
Reference to BIS codes	:	IS 1786-2008	
Date of test:	:	20-03-2017	

Sl.No	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample (kg/m)	Yield stress (N/mm^2)	Tensile strength (N/mm^2)	Elongation (%)
1	Indus Fe 500	Fe500	10mm	0.612	539	628	19.5%

Sl.No	Identification of sample	Grade of the sample	Diameter of the steel bar	Bend test	Rebend test
1	Indus Fe 500	Fe500	10mm	Satisfactory	Satisfactory

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ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24
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SPECIFIC GRAVITY AND WATER ABSORPTION TEST
IS:2386 (Part III)

Lab ID	:	**CP-RW-2017-04-25-04** **Date: 28-04-17**
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Agency	:	Improvements to Road and Drains at Kogilu, Ayyappa Enclave in Ward No. 05 Byatarayanapura Sub Division.
Project Name	:	M. Sathish , # 06, 60 Feet Road, RMV 2nd Stage , Boopasandra Hoysala STL Krishna apartment Bangalore.
Customer Reference	:	BBMP/EE/BTP/WO/230/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	25-04-17
Sample ID No	:	2017-04-25-04/01
Type of Mix	:	Coarse Aggregate for SDBC (Semi Dense Bituminous concrete)
Date of test	:	25-04-17

Sl.No	Details of Observations	Index	Unit	Test 1	Test 2	Mean Value
1	Weight of Wet aggregates + Basket suspended in water	A1	grams	2262	2250	
2	Weight of Empty Basket suspended in water	A2	grams	791	791	
3	Weight of Aggregates in water	A=A1-A2	grams	1471	1459	
4	Weight of Saturated Surface Dry aggregate	B	grams	2372	2342	
5	Weight of oven dried aggregate	C	grams	2364	2337	
6	Specific gravity	C/(B-A)		2.62	2.65	2.64
7	Apparent Specific gravity	C/(C-A)		2.65	2.66	2.65
8	Water absorption	100*(B-C) /C	Percent	0.34	0.21	0.28

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TESTS RESULTS ON AGGREGATE IMPACT VALUE
(IS:2386 Part IV)

Lab ID	:	**CP-RW-2017-04-25-04** **Date: 28-04-17**
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Road and Drains at Kogilu, Ayyappa Enclave in Ward No. 05 Byatarayanapura Sub Division.
Agency	:	M. Sathish , # 06, 60 Feet Road, RMV 2nd Stage , Boopasandra Hoysala STL Krishna apartment Bangalore.
Customer Reference	:	BBMP/EE/BTP/WO/230/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	25-04-17
Sample ID No	:	2017-04-25-04/01
Type of Mix	:	Coarse Aggregate for SDBC (Semi Dense Bituminous Concrete)
Date of test	:	26-04-17

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	301.2	301.2
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	65.6	63.5
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	235.2	237.1
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.4	0.6
5	Aggregate impct value	(B/A)*100	21.78	21.08
6	Aggregate impct value (Mean of two tests)		21.4	

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE (IS 2386 (Part 1) 1963 (RA 2011)

Lab ID	:	**CP-RW-2017-04-25-04** **Date: 29-04-17**
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Road and Drains at Kogilu, Ayyappa Enclave in Ward No. 05 Byatarayanapura Sub Division.
Agency	:	M. Sathish , # 06, 60 Feet Road, RMV 2nd Stage , Boopasandra Hoysala STL Krishna apartment Bangalore.
Customer Reference	:	BBMP/EE/BTP/WO/230/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	25-04-17
Sample ID No	:	2017-04-25-04/01
Type of Mix	:	Coarse Aggregate for SDBC (Semi Dense Bituminous Concrete)
Date of test	:	26-05-17

Result:

Flakiness Index	11.5%
Elongation Index	10.2%
Combined Flakiness & Elongation Index for SDBC	21.7%

Comments:

Maximum allowable Flakiness & Elongation Index For SDBC is 30 %

Note:-

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BBMP ward No.5

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TEST REPORT ON BITUMEN

Lab ID	:	**CP-2017-04-25-04** **Date: 28-04-17**
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Road and Drains at Kogilu, Ayyappa Enclave in Ward No. 05 Byatarayanapura Sub Division.
Agency	:	M. Sathish , # 06, 60 Feet Road, RMV 2nd Stage , Boopasandra Hoysala STL Krishna apartment Bangalore.
Customer's Reference	:	BBMP/EE/BTP/WO/230/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	25-04-17
Sample ID No	:	2017-04-25-04/01
Sample Type	:	Bitumen
Reference to BIS codes	:	IS: 1201-1220(1978) (Reaffirmed-2004)
Date of test	:	26-05-17

Test Results

Sl.no	Name of Test	Result	Requirements as per IS:73-2013
1	Penetration at 25°C , in 1/10th mm	68	60 to 70
2	Softening Point, °C	48.2	Min. 40°C
3	Ductility, cm	99	Min. 75cm
4	Flash point, °C	255	Min. 220°C
	Fire point, °C	272	

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DETERMINATION OF FLAKINESS INDEX AND ELONGATION INDEX OF COARSE AGGREGATE(IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2017-04-20-05** **Date: 22-04-17**
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Road and Drains at Kogilu, Ayyappa Enclave in Ward No. 05 Byatarayanapura Sub Division.
Agency	:	M. Sathish , # 06, 60 Feet Road, RMV 2nd Stage , Boopasandra Hoysala STL Krishna apartment Bangalore.
Customer Reference	:	BBMP/EE/BTP/WO/230/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	20-04-17
Sample ID No	:	2017-04-20-05/01
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	21-04-17

Result:

Index	Percentage of Flakiness and Elongation Index	Secified limits as per MORTH specification table 400-12
Flakiness Index	10.6%	Combined Flakiness & Elongation Index for WMM is Maximum 35%
Elongation Index	12.3%	
Combined Flakiness and Elongation Index for WMM	22.9%	

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TEST REPORT OF AGGEGRATE IMPACT VALUE
IS: 2386 Part IV

Lab ID	:	**CP-RW-2017-04-20-05** **Date: 22-04-17**
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Road and Drains at Kogilu, Ayyappa Enclave in Ward No. 05 Byatarayanapura Sub Division.
Agency	:	M. Sathish , # 06, 60 Feet Road, RMV 2nd Stage , Boopasandra Hoysala STL Krishna apartment Bangalore.
Customer Reference	:	BBMP/EE/BTP/WO/230/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	20-04-17
Sample ID No	:	2017-04-20-05/01
Type of Mix	:	Coarse Aggregate for WMM (Wet Mix Macadam)
Date of test	:	21-04-17

Sl.No	Particulars of observations	Index	TEST 1	TEST 2
1	Total weight of the surface dry sample sample (passing 12.5 mm and retained on 10mm sieve)	A	315.0	315.0
2	Weight of fraction passing 2.36mm sieve After giving 15 blows	B	70.9	69.0
3	weight of fraction retained 2.36mm sieve After giving 15 blows	C	243.8	245.6
4	Total weight of (B+C) is less than the initial weight (Weight A) by more than one gram the result shall be discarded and a fresh test made.	A-(B+C)	0.3	0.4
5	Aggregate impact value	(B/A)*100	22.5	21.9
6	Aggregate impact value (Mean of two tests)	Pecentage	22.2	

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TEST RESULTS OF GRADATION FOR SDBC
IS 2386 (Part 1) 1963 (RA 2007)

Lab ID	:	**CP-RW-2017-04-25-04** **Date: 28-04-17**
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Road and Drains at Kogilu, Ayyappa Enclave in Ward No. 05 Byatarayanapura Sub Division.
Agency	:	M. Sathish , # 06, 60 Feet Road, RMV 2nd Stage , Boopasandra Hoysala STL Krishna apartment Bangalore.
Customer Reference	:	BBMP/EE/BTP/WO/230/2016-17
Source of Sample	:	Sample supplied by the Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	25-04-17
Sample ID No	:	2017-04-25-04/01
Type of Mix	:	SDBC-Plant (Semi Dense Bituminous Concrete)
Date of test	:	26-04-17
Oven Dry Weight(gm)	:	5000

IS Sieve Size (mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-2)
13.2	0	0	0	100	100
9.5	327	327	6.5	93.5	90-100
4.75	2209	2536	50.7	49.3	35-51
2.36	1052	3588	71.8	28.2	24-39
1.18	439	4027	80.5	19.5	15-30
0.3	429	4456	89.1	10.9	9-19
0.075	172	4628	92.6	7.4	3-8
PAN	372	5000	100.0	0.0	0

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TESTS RESULTS ON STABILITY OF MIX

Lab ID	:	**CP-RW-2017-04-25-04** **Date: 29-04-17**
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Road and Drains at Kogilu, Ayyappa Enclave in Ward No. 05 Byatarayanapura Sub Division.
Agency	:	M. Sathish , # 06, 60 Feet Road, RMV 2nd Stage , Boopasandra Hoysala STL Krishna apartment Bangalore.
Customer Reference	:	BBMP/EE/BTP/WO/230/2016-17
Source of Sample	:	Hot Mix Plant, Bangalore
Sample Condition	:	Satisfactory
Date of Receipt	:	25-04-17
Sample ID No	:	2017-04-25-04/01
Type of Mix	:	SDBC (Semi Dense Bituminous Concrete)
Date of test	:	26-05-17

The results of the tests conducted on the Semi Dense Bituminous Concrete mix sample are as follow

Sl.No	Particulars of observations	TEST 1	TEST 2	Secified limits as per MORTH specification table 500-16
1	Marshal Stability at 60°C, KN	11.51	11.02	8.2KN(min)
2	Marshal flow at 60°C, mm	3.72	3.55	2-4
3	Percent air Voids	4.28	4.12	3-5
4	Percent Voids in mineral Aggregate(VMA %)	13.92	13.88	13-15
5	Percent Voids filled with Bitumen(VFB %)	72.16	72.1	65-75
6	Density, g/cc	2.25	2.25	–

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HIGHWAY & BUILDING MATERIALS TESTING LABORATORY | STRUCTURAL | GEO TECHNICAL | PROJECT MANAGEMENT | SURVEYING SERVICES |

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

TEST REPORT OF AGGEGRATE STRIPPING VALUE OF ROAD AGGRGATE (IS:6241)

Lab ID	:	**CP-RW-2017-04-25-04** **Date: 28-04-17**
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Road and Drains at Kogilu, Ayyappa Enclave in Ward No. 05 Byatarayanapura Sub Division.
Agency	:	M. Sathish , # 06, 60 Feet Road, RMV 2nd Stage , Boopasandra Hoysala STL Krishna apartment Bangalore.
Customer Reference	:	BBMP/EE/BTP/WO/230/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	25-04-17
Sample ID No	:	2017-04-25-04/01
Type of Mix	:	SDBC (Semi Dense Bituminous Concrete)
Date of test	:	26-04-17

Type of Binder	:	60/70
% of Binder Used	:	5.0%
Weight of Aggregate	:	200.0 gm
Weight of Binder	:	10.0 gm
Temperature of water bath	:	40°C

No of test	Retained Stripping Percentage	Stripping Percentage	Average Retained Stripping Percentage	Secified limits as per MORTH specification table 500-8
1	98.0	2.0	98.2	Minimum Retained Coating 95%
2	99.0	1.0		
3	97.5	2.5		

Note:
The results pertain to the samples received and tested.
All information furnished by Customer/Representative
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Prepared by
Harshitha

AE Ward No 5
ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-26

****End of Report****

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4, 7TH MAIN MALLESWARAM, BANGALORE -3

TEST RESULTS OF GRADATION FOR WMM

Lab ID	:	**CP-RW-2017-04-20-05** **Date: 22-04-17**
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.
Project Name	:	Improvements to Road and Drains at Kogilu, Ayyappa Enclave in Ward No. 05 Byatarayanapura Sub Division.
Agency	:	M. Sathish , # 06, 60 Feet Road, RMV 2nd Stage , Boopasandra Hoysala STL Krishna apartment Bangalore.
Customer Reference	:	BBMP/EE/BTP/WO/230/2016-17
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	20-04-17
Sample ID No	:	2017-04-20-05/01
Type of Mix	:	WMM (Wet Mix Macadam)
Date of test	:	20-04-17
Oven Dry Weight	:	11585 Grams

IS Sieve Size(mm)	Weight Retained (gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Spec.I.Vide Table 400.13 MORTH Specification
53	0	0	0	100	100
45	332	332	2.9	97.1	95-100
22.4	2255	2587	22.3	77.7	60-80
11.2	2175	4762	41.1	58.9	40-60
4.75	2311	7073	61.1	38.9	25-40
2.36	1875	8948	77.2	22.8	15-30
0.6	576	9524	82.2	17.8	8-22
0.075	1611	11135	96.1	3.9	0-5

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Prepared By:
Harshitha

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Quality Manager

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TEST RESULTS OF BITUMEN CONTENT FOR SDBC
(AS per IRC:SP:-11-1984)

Lab ID	:	**CP-RW-2017-05-03-02**	**Date: 05-05-17**
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.	
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Road and Drains at Kogilu, Ayyappa Enclave in Ward No. 05 Byatarayanapura Sub Division.	
Agency	:	M. Sathish , # 06, 60 Feet Road, RMV 2nd Stage , Boopasandra Hoysala STL Krishna apartment Bangalore.	
Customer Reference	:	BBMP/EE/BTP/WO/230/2016-17	
Source of Sample	:	Sample supplied by Agency	
Date of Receipt	:	03-05-17	
Sample ID No	:	2017-05-03-02/01	
Type of Mix	:	SDBC (Semi Dense Bituminous Concrete)	
Date of test	:	03-05-17	

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	500	500
2	Weight of the sample After extraction	B	476	475
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	4.80	5.00
4	Average percentage	%	4.90	

AS ward No 5
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ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ
ಬಿ.ಬಿ.ಎಂ.ಪಿ., ಬೆಂಗಳೂರು-24

Prepared By:
Harshitha

ಸಹಾಯಕ ಅಭಿಯಂತರರು
ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬ್ಯಾಟರಾಯನಪುರ ಉಪ ವಿಭಾಗ

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Lab ID : **CP-RW-2017-05-03-02** **Date: 05-05-17**

Sample ID No : **2017-05-03-02/01**

AFTER EXTRACTION (Trail-1)

Oven Dry Weight(gm) : 476

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-2)
13.2	0	0	0	100.0	100
9.5	31	31	6.5	93.5	90-100
4.75	213	244	51.3	48.7	35-51
2.36	63	307	64.5	35.5	24-39
1.18	39	346	72.7	27.3	15-30
0.3	71	417	87.6	12.4	9-19
0.075	34	451	94.7	5.3	3-8

AFTER EXTRACTION (Trail-2)

Oven Dry Weight(gm) : 475

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-2)
13.2	0	0	0	100.0	100
9.5	29	29	6.1	93.9	90-100
4.75	215	244	51.4	48.6	35-51
2.36	62	306	64.4	35.6	24-39
1.18	41	347	73.1	26.9	15-30
0.3	66	413	86.9	13.1	9-19
0.075	32	445	93.7	6.3	3-8

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Harshitha

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Quality Manager

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ಬಿ.ಬಿ.ಎಂ.ಪಿ. ಬೆಂಗಳೂರು-26

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TEST RESULTS OF BITUMEN CONTENT FOR SDBC
(AS per IRC:SP:-11-1984)

Lab ID	:	**CP-RW-2017-05-03-02**	**Date: 05-05-17**
Customer	:	Assistant Executive Engineer, Byatarayanapura Sub Division, BBMP, Bangalore.	
Address	:	Byatarayanapura Sub Division, BBMP, Bangalore.	
Project Name	:	Improvements to Road and Drains at Kogilu, Ayyappa Enclave in Ward No. 05 Byatarayanapura Sub Division.	
Agency	:	M. Sathish , # 06, 60 Feet Road, RMV 2nd Stage , Boopasandra Hoysala STL Krishna apartment Bangalore.	
Customer Reference	:	BBMP/EE/BTP/WO/230/2016-17	
Source of Sample	:	Sample supplied by Agency	
Date of Receipt	:	03-05-17	
Sample ID No	:	2017-05-03-02/02	
Type of Mix	:	SDBC (Semi Dense Bituminous Concrete)	
Date of test	:	03-05-17	

Sl.no	Description	Index	Trail 1	Trail 2
1	Weight of the Sample	A	501	500
2	Weight of the sample After extraction	B	476	477
3	Bitumen percentage	$\frac{A-B}{A} \times 100$	4.99	4.60
4	Average percentage	%	4.80	

Ward No 5

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Prepared By:
Harshitha

R KARTHIK RECHAN
Authorized Signatory
Quality Manager

Lab ID : **CP-RW-2017-05-03-02** **Date: 05-05-17**

Sample ID No : **2017-05-03-02/02**

AFTER EXTRACTION (Trail-1)

Oven Dry Weight(gm) : 476

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-2)
13.2	0	0	0	100.0	100
9.5	29	29	6.1	93.9	90-100
4.75	232	261	54.8	45.2	35-51
2.36	65	326	68.5	31.5	24-39
1.18	27	353	74.2	25.8	15-30
0.3	76	429	90.1	9.9	9-19
0.075	35	464	97.5	2.5	3-8

AFTER EXTRACTION (Trail-2)

Oven Dry Weight(gm) : 477

IS Sieve Size(mm)	Weight Retained(gm)	Comulative Weight Retained (gm)	Comulative % of Retained	Comulative % of Passing	Secified limits as per MORTH specification table 500-15(grading-2)
13.2	0	0	0	100.0	100
9.5	34	34	7.1	92.9	90-100
4.75	205	239	50.1	49.9	35-51
2.36	60	299	62.7	37.3	24-39
1.18	43	342	71.7	28.3	15-30
0.3	72	414	86.8	13.2	9-19
0.075	42	456	95.6	4.4	3-8

Note:-

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Assured Nos

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Prepared By:
Harshitha

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Quality Manager

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